CLAIMS

What is claimed is:

1. A method of mapping nodes in an $M \times N$ interconnection fabric, wherein M and N are integer values, comprising:

generating an observed mapping of the nodes in the interconnection fabric showing a location of a first node relative to an x-axis of the fabric and relative to a y-axis of the fabric;

comparing the observed mapping of the nodes to a set of expected mappings; and

identifying the expected mapping which is most similar to the observed mapping.

2. The method of Claim 1, further comprising:

assigning identification codes to each of the nodes based on the identified mapping which is most similar to the observed mapping.

3. The method of Claim 1, wherein:

said generating the observed mapping of the nodes comprises generating an observed origin code mapping based on origin codes received from the nodes.

4. The method of Claim 3, wherein:

the set of expected mappings contains a set of all possible valid mappings of origin codes for the $M \times N$ fabric; and

said comparing the observed mapping of the nodes to the set of expected mappings comprises comparing the received origin codes in the observed mapping to the origin codes in each expected mapping in the set of expected mappings.

5. The method of Claim 4, wherein:

said comparing the received origin codes in the observed mapping to the origin codes in each expected mapping in the set of expected mappings comprises:

for each expected mapping, identifying the number of origin codes which differ between the observed mapping and the expected mapping, wherein Δ is the number of differing origin codes; and

said identifying the expected mapping which is most similar to the observed mapping comprises identifying the expected mapping having Δ less than the lesser of M and N.

6. The method of Claim 4, wherein:

each of the nodes forming the x and y axes of the interconnection fabric have an origin code set at a first value; and

each of the nodes not forming the x and y axes of the interconnection have an origin code set at a second value.

7. The method of Claim 3, further comprising:

sending probe messages to query a first plurality of nodes in the fabric for each of their associated origin codes; and

receiving the origin code from each of the first plurality of the nodes in the fabric.

8. The method of Claim 7, wherein:

said sending probe messages to query the first plurality of nodes in the fabric and said receiving the origin code from each of a first plurality of the nodes in the fabric is performed by the first node.

9. The method of Claim 1, further comprising:

identifying the dimensions of the $M \times N$ interconnection fabric; and

generating the set of expected mappings based on the identified dimensions.

10. A computer system, comprising:

an $M \times N$ array of nodes, wherein M and N are integer values;

a plurality of interconnects connecting the $M \times N$ array; and

a first node in the $M \times N$ array configured to:

generate an observed mapping of the nodes showing a location of the first node relative to an x-axis of the fabric and relative to a y-axis of the fabric;

compare the observed mapping of the nodes to a set of expected mappings; and

identify the expected mapping which is most similar to the observed mapping.

11. The system of Claim 10, wherein:

the first node is further configured to assign identification codes to each of the nodes based on the identified mapping which is most similar to the observed mapping.

12. The system of Claim 10, wherein:

the first node is further configured to generate an observed origin code mapping of the received origin codes.

13. The system of Claim 12, wherein:

said set of expected mappings contains a set of all possible valid mappings of origin codes for the $M \times N$ fabric; and

said first node is further configured to compare the observed mapping of the nodes to the set of expected mappings comprises by comparing the received origin codes in the observed mapping to the origin codes in each expected mapping in the set of expected mappings.

14. The system of Claim 13, wherein:

said first node is further configured to compare the received origin codes in the observed mapping to the origin codes in each expected mapping in the set of expected mappings by:

for each expected mapping, identifying the number of origin codes which differ between the observed mapping and the expected mapping, wherein Δ is the number of differing origin codes; and

said expected mapping which is most similar to the observed mapping is the expected mapping having Δ less than the lesser of M and N.

15. The system of Claim 13, wherein:

each of the nodes forming the x and y axes of the interconnection fabric have an origin code set at a first value; and

each of the nodes not forming the x and y axes of the interconnection have an origin code set at a second value.

16. The system of Claim 12, wherein said first node is further configured to:

send probe messages to query a first plurality of nodes in the fabric for each of their associated origin codes; and

receive the origin code from each of the first plurality of the nodes in the fabric.

17. The system of Claim 10, wherein said first node is further configured to:

identify the dimensions of the $M \times N$ interconnection fabric; and

generate the set of expected mappings based on the identified dimensions.

18. An article of manufacture including code for mapping nodes, wherein the code causes operations to be performed comprising:

generating an observed mapping of nodes in an $M \times N$ interconnection fabric showing a location of a first node relative to an x-axis of the fabric and relative to a y-axis of the fabric, wherein M and N are integer values;

comparing the observed mapping of the nodes to a set of expected mappings; and

identifying the expected mapping which is most similar to the observed mapping.

19. The article of manufacture of Claim 18, further comprising:

assigning identification codes to each of the nodes based on the identified mapping which is most similar to the observed mapping.

20. The article of manufacture of Claim 18, wherein:

said generating the observed mapping of the nodes comprises generating an observed origin code mapping of the received origin codes.

21. The article of manufacture of Claim 20, wherein:

the set of expected mappings contains a set of all possible valid mappings of origin codes for the $M \times N$ fabric; and

said comparing the observed mapping of the nodes to the set of expected mappings comprises comparing the received origin codes in the observed mapping to the origin codes in each expected mapping in the set of expected mappings.

22. The article of manufacture of Claim 21, wherein:

said comparing the received origin codes in the observed mapping to the origin codes in each expected mapping in the set of expected mappings comprises:

for each expected mapping, identifying the number of origin codes which differ between the observed mapping and the expected mapping, wherein Δ is the number of differing origin codes; and

said identifying the expected mapping which is most similar to the observed mapping comprises identifying the expected mapping having Δ less than the lesser of M and N.

23. The article of manufacture of Claim 21, wherein:

each of the nodes forming the x and y axes of the interconnection fabric have an origin code set at a first value; and

each of the nodes not forming the x and y axes of the interconnection have an origin code set at a second value.

24. The article of manufacture of Claim 21, further comprising:

sending probe messages to query a first plurality of nodes in the fabric for each of their associated origin codes; and

receiving the origin code from each of the first plurality of the nodes in the fabric.

25. The article of manufacture of Claim 24, wherein:

said sending probe messages to query the first plurality of nodes in the fabric and said receiving the origin code from each of the first plurality of the nodes in the fabric is performed by the first node.